

Toward integrated medical resource policies for Canada: 8. Geographic distribution of physicians

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This is the eighth in a series of articles¹⁻⁷ based on the report *Toward Integrated Medical Resource Policies for Canada*,* prepared for the Federal/Provincial/Territorial Conference of Deputy Ministers of Health⁸⁻¹⁰ and the fifth to address a specific policy area.⁴⁻⁷ It summarizes our analysis of the geographic maldistribution of physicians in Canada and possible policy responses.

The consensus from our interviews was that there are serious problems with the geographic distribution of physicians in Canada. Indeed, this was one of the five “first-tier” problem areas to emerge from those interviews, specific concerns being the lack of availability of specialty services (particularly primary care) in rural areas and the possible oversupply of general or family practitioners in many cities.

The problems have stimulated considerable provincial activity.¹¹⁻¹³ More recently the CMA constituted an advisory panel on the provision of medical services in underserved regions,¹⁴ and the Canadian Association of Internes and Residents released a discussion paper on the same topic.¹⁵

*The full report (in two volumes) is available for \$75 (including postage and GST) from Barbara Moore, Centre for Health Services and Policy Research, University of British Columbia, at the reprint requests address, or fax (604) 822-5690, or from Lynda Marsh, Centre for Health Economics and Policy Analysis, McMaster University, Rm. 3H26, Health Sciences Centre, 1200 Main St. W, Hamilton, ON L8N 3Z5, or fax (416) 546-5211.

Is there a problem?

What constitutes an “underserved region” and how serious one believes the overall problem in distribution to be depend on one’s view of an ideal distribution — whether it be equal distance from patient to nearest practitioner, equal per capita supply, equal per capita use of specialist services or “reasonable access to necessary services” for the entire population. These distinctions are of more than academic interest. Although the geographic variation across Canada in physician supply per capita is well known, it is less well known that the variation in medical service *utilization* per capita is far smaller.^{16,17} The latter seems consistent with the recent finding that there is apparently no greater sense among rural than among urban residents that they face harmful restrictions in access to medical care.¹⁸

What, then, are we to make of concerns about geographic maldistribution (by which is most often meant areas with shortages)? Variation in supply per se is neither necessary nor sufficient to imply shortages. Provincial ratios of population to physicians (excluding postgraduate trainees) in 1990 varied from about 490, in Quebec and British Columbia, to 743, in New Brunswick;¹⁹ yet the Northwest Territories had a ratio of 1174, and we heard nothing from that jurisdiction, which suggests severe shortages. Even larger variations are found in international

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comparisons, which also seem to show little consensus on what constitutes a surplus or a shortage.²⁰ Despite the attention that this topic continues to attract we still lack reasonable evaluative criteria.

With few exceptions, the need-based evidence on which claims of shortage hinge is either nonexistent or circular (i.e., derived from statistics on physician use without a determination of the relative appropriateness of different rates). Furthermore, recent Canadian studies cast some doubt on the extent even of supply variance, at least for general or family practitioners in most provinces.¹⁴ For example, the Alberta Medical Association *Report of the Task Force on Rural Medical Care*²¹ identified few Alberta communities in "dire need of basic physician services." More recently, a CMA report¹⁴ suggested that there was far less geographic disparity in family practitioner numbers than is commonly implied in debate.

We do not wish to imply that one of the most commonly stated concerns in our interviews might not, in fact, be a problem. There are provinces with apparently critical shortages — even of general and family practitioners — in some regions; but there will always be differences in the population-physician ratio across the country, simply because of the population distribution and the numbers of patients required to sustain physicians of different specialties. Situations will undoubtedly arise in which the more restricted access in rural areas may have detrimental health effects. On the other hand, excess access, as may exist in cities, may also be detrimental to patients' health.⁷

Clearly, improved distribution is warranted in some situations — for example, if a community of 5000 people has only one physician and yet the population-family physician ratio in cities is under 1000 (as is often the case). It is difficult to argue that the need for general or family practitioners should be greater in urban than in rural areas. In fact, the reverse could convincingly be argued, on the grounds that the availability of specialists is always going to (and should) be greater in urban centres. Similarly, there are communities without, but large enough to warrant, the services of a pediatrician, an obstetrician-gynecologist, an anesthetist, a psychiatrist or a general internist or surgeon. In such situations the fundamental problem is that necessary services are not available, without great inconvenience, to some Canadians. Sometimes the services are available but for one reason or another are inadequate. For example, some of the Canadian-trained physicians serving rural communities have been found deficient in certain technical and specialty areas, and thus recruits (with more extensive postgraduate training) from other countries are more desirable.¹²

Beyond these rather obvious cases the ground

and the debate become much fuzzier. The geographic variation in the supply of all specialists is far greater than that in the supply of general or family practitioners.²² Although this does not establish a case for a "Noah's ark" solution to rural specialty shortages for every community, these supply variations are associated with wide regional variations in the use of many specialist services.^{23,24} Not only are specialists not close at hand, but residents of smaller communities receive far fewer of their services. For example, in 1987-88 the residents of Victoria and Vancouver incurred costs of about \$16 per person for ophthalmologic services and just under \$6 for urologic services, as compared with \$9 and \$4 for residents of the rest of the province.²³ Whether rural residents are better or worse off as a result is unknown. What *is* known is that the required patient population generally increases with the degree of subspecialization, so that geographic maldistribution of considerable magnitude is going to be a fact of life in many specialties.

Determinants of geographic distribution

Where there are distribution problems warranting policy attention their causes are those factors that influence an individual physician's choice of practice location and our inability to develop incentives sufficiently sensitive to the interaction of these myriad factors. The literature on this topic is extensive and continues to grow.^{14,25}

There are diverse views on the relative importance of different determinants of practice location. The research findings do not yet seem to be converging in all areas; for example, some investigators have suggested that income and other financial incentives play a relatively insignificant role,^{11,14,25,26} whereas others have implied that the potential of financial incentives is underestimated.²⁷ The complexity of the factors underlying this major decision is becoming increasingly apparent. It is not simply a matter of inadequate financial incentives: the factors influencing decisions about location of practice are intertwined with those about choice of specialty, but income and specialty are not the only motivating forces. Furthermore, factors bearing on the initial decisions about location may take on different importance in later decisions about whether to stay in an area.

The initial location decision depends on such factors as the region from which students come,^{14,28} the life experiences of students before entering medical school, influences and exposures during medical education, relative incomes and various lifestyle factors. The influences during medical education include the location of training sites (virtually all of them at present, with the significant exception of

some of the family practice programs, being in large cities), exposure to rural practice during training, generalist curricular content and the perceived prestige and promotion of different specialties and practice arrangements within the medical school milieu.

The lifestyle factors include characteristics of both professional and personal life. These will all be weighed in relation to opportunities in a variety of possible practice locations; their relative importance will not be the same for any two physicians, and they will take on relatively greater importance in "stay-or-move" decisions. Ultimately, the cause of geographic maldistribution may be the sheer intractability of developing incentive programs that adequately address enough factors at critical points in the physician's life cycle to tip some scales.

This discussion of maldistribution suggests five kinds of causes: sources and selection of medical students, educational exposures and influences, and financial, professional lifestyle and personal lifestyle considerations. Past policy initiatives have tended to target only small subsets of these without regard to the interdependence of distribution problems and the problems of overall supply, graduates of foreign medical schools, remuneration policy and broader health resource issues such as scope of practice.

Policy approaches

Equal population-physician ratios for all regions and all types of physicians are *not* appropriate objectives for physician resource policy because of the spatial distribution of populations and the incidence and prevalence of illnesses requiring the attention of different specialties.

Nevertheless, access to necessary clinical services that is equitable or reasonable (however imprecise these terms are) for all Canadians is an appropriate objective for public policy and more in line with the spirit and foundations of universal medical insurance. However, this does not provide much of a guide as to how to improve the present situation. Increases in overall physician supply have been well in excess of rates of population growth for at least four decades,⁷ yet urban-rural and interprovincial disparities remain and, in some cases, have become more marked. As the CMA's advisory panel noted recently, "whatever factors contribute to deficiencies in the provision of medical services in rural and intermediate-size communities, an overall shortage of physicians is not one of them."²⁹

The problem has historically been seen as one of *physician* maldistribution, a view that encourages the search *only* for physician-based solutions, to the exclusion of other possible approaches. Yet regions such as the Northwest Territories and the Yukon Territory appear to have demonstrated that not all

rural-area problems need to be addressed by physician solutions and, moreover, that nonphysician solutions are often at least as effective and more enduring.³⁰ This suggests two different approaches to improving the distribution of primary health care services, some combination of which may be the best hope.

It is now widely accepted that nonphysicians can provide at least as effectively a wide spectrum of primary care services traditionally viewed as exclusively in the practice domain of physicians. We do not propose to review the reasons why physician substitutes have not been trained or deployed in Canada,³¹ but the establishment of training programs for extended-duty nurses, physician assistants and other personnel who are able to provide some of these services seems appropriate in the light of our recommendations for reductions in the numbers of physicians being trained in and entering practice in Canada.^{4,7*} The development, location and funding of such programs should be key components of a new national medical resource policy package.

One model for the deployment of physician substitutes would see them employed as frontline caregivers and gatekeepers within regional service networks. They would be able to call on regional physician consultants based in larger centres, and these consultants (general or family practitioners or generalist specialists who wish to serve as primary care consultants) would in turn call on regional referral "hubs" with on-line clinical information databases and specialists trained specifically to serve nonurban settings. Although this approach is not without its problems (three obvious ones being supervision and the availability of referral resources, legal liability and the periodic shortages of nurses) we know of no compelling arguments against using physician substitutes in regions where physician recruitment continues to be problematic.

With or without the training and deployment of physician substitutes, improvements in physician distribution will require a concerted assault along the entire spectrum of policy avenues articulated earlier.³ Until now most attempts to improve geo-

**In this respect we fully agree with the warning of the CMA's advisory panel that "if the [Barer/Stoddart] recommendations to reduce the enrolment of Canadian medical students are introduced by provincial governments together with restrictions on the entry of graduates of foreign medical schools, the combination might seriously affect the availability of physicians to serve in Canada's nonurban areas."³² It is virtually certain that this would happen if that were all that were done. For that reason we went out of our way to emphasize the interdependence of physician resource policies and the fact that these two areas should not be addressed in isolation. In combination with the other initiatives that we have suggested in earlier articles and will be discussing in future articles, these policies on enrolment and foreign graduates are far less likely to cause the feared problem.*

graphic distribution have amounted to a general "trickle-down" policy of increasing supply or piecemeal approaches that concentrated largely on financial incentives (e.g., northern or isolation income programs, as in British Columbia and Ontario, and differential fee levels, as in Manitoba and Quebec). The results have at best been equivocal.^{33,34} Family practice programs in a number of provinces have recently made considerable strides in developing more nonurban training sites. However, we are unaware of any jurisdiction that has attempted to design and implement a systematic, coordinated set of initiatives aimed at the whole physician life cycle, although attempts to integrate a number of the necessary pieces have been made in Quebec, and some components exist in various forms in most regions. A relatively comprehensive plan has recently been proposed in Alberta.^{11,12} A *national* strategy along these lines would, we believe, be a world first, but it would require a significant commitment of resources and collaborative policy attention.

An extreme version of such a policy package might involve most of the following.

- Science enrichment programs for rural high schools when warranted.
- Career counselling for rural high-school students.
- The reservation of substantial numbers of places in medical school for qualified applicants interested in practising in rural areas through arrangements for return-in-service after graduation.
- The restructuring of medical admissions criteria so that factors other than pure excellence in traditional premedical science courses are given more weight or so that extra weight is given to students from rural areas.
- The restructuring of undergraduate medical education, particularly in the third and fourth years, to inject more exposure to community and ambulatory practice and to cover issues of broader determinants of population health.
- The provision of more rural clinical sites in family practice programs through the inclusion of more clinical faculty members from rural areas as supervisors.
- The enhancement of rural exposure and the development of rotations tailored to rural practice needs within the expected extension to basic postgraduate prelicensure training.
- The development of compulsory rural-area rotations and more community-based exposure for all but the subspecialty residency training programs based at tertiary care hospitals.
- The development of new residency training programs designed explicitly to prepare generalist specialists to serve as rural regional consultants.
- Financial incentives both for training (bursaries or loans) and practice (income incentives) to encourage choice of specialties in short rural supply.

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- Income incentives to encourage the location of practices in nonurban settings.

- Various other incentives and initiatives (such as opportunities for subsidized continuing education and locum relief) to attract and retain physicians in rural areas.

- Academic medical centres as the hubs of on-call, clinical decision-making support networks and as sources of locum or other relief for rural community physicians.

This is a comprehensive (some might say impossibly complex) approach that cuts across virtually every other area of physician resource policy. For all its complexity, however, the list does not even touch on the policies required to make residence in smaller communities an attractive option for physicians' families; for example, one of the key factors undermining retention is children's education.^{14,25} In fact, attempts to solve problems of geographic distribution reveal more clearly than any other area of physician resource policy the linkages among the various issues and policy instruments.

Such a comprehensive approach could circumvent some basic problems with existing geographic distribution programs. Many of these initiatives (such as Ontario's Underserved Area Program) attempt to influence choice of location largely after the socialization process during medical education is complete and must work with what the medical education establishment has chosen to admit for training, the mix of specialties available and the effects of the training experience. The more comprehensive approach would see different types of students enter training; a different set of exposures, influences and expectations during training; a set of financial incentives at that time to encourage the choices that might increase the probability of students' choosing rural practice; and other nonincome incentives to improve recruitment to and retention in rural areas.

A number of the components in the package are included because students from rural areas are more likely than those from urban areas to practise outside of cities. Although the enhancement of science education and career counselling in rural high schools may seem a bit beyond the scope of physician resource policy they acknowledge the strong influence of "home region" and the view expressed to us in interviews that rural high-school students tend to receive poorer-quality education in subjects likely to channel them into or qualify them for medical careers. (This is particularly acute for native students.³⁵) We are unaware of the *evaluation* of any programs that have attempted to channel more rural-area students into medical schools through

such initiatives. As with any new initiative the processes and outcomes deserve ongoing monitoring.

Reserving undergraduate places for students who meet the entry standards and who are also interested in and willing to practise in areas that are relatively poorly supplied might also be effective in encouraging more rural-area students to seek medical careers. Beyond its possible attraction to such students this component would likely be one of the most effective in this policy package, at least for recruitment (although less so for retention).

The next four components involve the development during training of more clinical experience outside urban tertiary care hospitals — for example, in community-based ambulatory settings or in entire programs tailored for rural areas. Such initiatives are premised on two influences on choice of location: preparedness for rural practice and the location of training. One of the problems cited most often during our interviews was that most medical education in Canada does not prepare graduates for practice in environments that lack the extensive referral and support networks found in cities.

If the predominant influence of the tertiary care hospital as practice milieu is to be reduced, the role of the Royal College of Physicians and Surgeons of Canada in accrediting training sites may require examination. If part of the problem of restricted rural-exposure opportunities for generalist and primary care specialists is a lack of accredited rural sites, then a re-examination of the applicability of present accreditation standards to nonurban, non-tertiary-care hospitals may be indicated. Alternatively, academic medical centres may need to be more creative in persuading rural physicians to become involved in the academic enterprise, so that more rural sites become integrated into accredited programs. In the extreme, a national strategy might involve the designation of one or more health sciences centres as specialized training centres for family practitioners and rural generalist specialists. Such centres might also then be the logical sites for national training programs for some allied health care professionals (e.g., extended-role nurses) who would be serving primarily in northern and other rural areas.

Residency stipend bonuses or bursaries could be offered to students choosing to train in specialty programs tailored for rural regional consultant practices (the bonus being returnable if a minimum period in such a practice is not completed). Similarly, student-loan remission programs for those agreeing to practise in designated rural areas for specified periods would have the same purpose. There are problems of enforcement and collection with all such schemes; furthermore, financial incentives may be more effective if they are targeted directly at the

determination of practice location. Here there are numerous options, including rural-area income guarantees, isolation allowances and fee levels sensitive to distance from a referral centre. The specific form seems far less important than the general approach of attempting to attract physicians to rural areas through relatively more generous income.

Finally, it is well known that income is often not the deterrent to physicians' choosing to practise and stay in a rural area. Social, familial, cultural and lifestyle problems are significantly less tractable than income issues. There are certainly some possibilities here: alternative methods of payment, such as regional capitation for general or family practice, might allow shared arrangements, which in turn would reduce on-call responsibilities.* The provision of funds for travel for continuing education, university education of children outside the area and other amenities that might make practice in rural areas more attractive are all possible approaches to increasing recruitment and retention rates. Other promising options include the development of clinical rotation models whereby medical faculty members rotate regularly through rural areas, so that those living and practising there full time have the opportunity to interact with urban faculty members, practise in urban areas, take vacations or avail themselves of continuing education opportunities at those medical schools. The extent of such relief could be tied to the distance of the physician's practice from the nearest city.

Rural living is simply not going to be attractive to some physicians (or their spouses or families²⁵) no matter what the incentives; but the possibilities for using educational milieu and a variety of "carrots" to make such situations more attractive have clearly not been exhausted.

There are also a number of possible policy "sticks," some of which have been used in Canada with (at best) mixed success. For example, hospital admitting privileges or regional billing-number quotas could be used as vehicles for restricting the number of urban general practitioners. For such policies to be applied as part of a national strategy, however, the areas still requiring physicians of each specialty would need to be designated nationally. The main problem with this type of policy is that, in practice, it differentially affects new entrants

**If a capitation model of funding primary care were adopted more generally, this in itself should mean fewer opportunities for urban general or family practice. Under such a model there would be limits to what could be done to maintain incomes in the face of a "patient shortage." Some urban practitioners would likely move to areas in which patients were more abundant, and others would have an incentive to enrol rural patients and develop ways of providing services for them. In both cases access for rural patients would improve.*

without providing any carrot to go with the stick.

Furthermore, solutions to geographic distribution problems do not call for every physician to spend a lifetime in rural areas. Suitably designed incentive packages will attract some physicians for varied periods. The remaining requirements must be met through the use of other personnel (and foreign medical graduates) who may be more willing to live and work in these areas. However, as we noted earlier⁴ the reduction of Canadian reliance on foreign medical graduates to fulfil rural needs seems of paramount importance for reasons extending beyond geographic maldistribution. (It is interesting that the CMA¹⁴ has produced data suggesting that foreign graduates have distributed themselves between urban and rural settings in proportions similar to those of Canadian graduates. Its conclusion is that this refutes the view that rural areas are differentially dependent on graduates of foreign medical schools. Unfortunately, the reported data do not provide the evidence with which to refute that hypothesis. On the contrary, they tend to support the contention of many of those we interviewed that large proportions of foreign graduates recruited into rural areas end up in urban centres after 5 years or less. To address the hypothesis about differential regional dependence requires data on the proportions of rural versus urban physicians who are foreign graduates.)

Conclusion

The problems and proposed solutions offered here have been around for a long time. To some extent the problems will always be with us. Recent investigations¹¹⁻¹⁴ have taken a far more comprehensive look at this single issue than we could possibly undertake in a project of this breadth. Our policy suggestions are largely consistent with the recommendations emerging from these other investigations: a set of initiatives are needed that deal directly and concurrently with the many causes of the problem.

We reiterate, however, that the interrelation of geographic distribution problems and solutions to other important components of physician resource policy is seldom considered in investigations that focus solely on distribution. Any policy package to improve distribution must be crafted as part of an integrated physician resource policy initiative so that solutions to particular policy problems do not create or exacerbate equally significant problems in other policy areas.

We are grateful to the many people who provided insights into this policy area during our interviews and to those organizations that kindly provided copies of recent reports on this issue.

References

1. Barer ML, Stoddart GL: Toward integrated medical resource policies for Canada: 1. Background, process and perceived problems. *Can Med Assoc J* 1992; 146: 347-351
2. Stoddart GL, Barer ML: Toward integrated medical resource policies for Canada: 2. Promoting change — general themes. *Ibid*: 697-700
3. Idem: Toward integrated medical resource policies for Canada: 3. Analytic framework for policy development. *Ibid*: 1169-1174
4. Barer ML, Stoddart GL: Toward integrated medical resource policies for Canada: 4. Graduates of foreign medical schools. *Ibid*: 1549-1554
5. Stoddart GL, Barer ML: Toward integrated medical resource policies for Canada: 5. The roles and funding of academic medical centres. *Ibid*: 1919-1924
6. Idem: Toward integrated medical resource policies for Canada: 6. Remuneration of physicians and global expenditure policy. *Can Med Assoc J* 1992; 147: 33-38
7. Barer ML, Stoddart GL: Toward integrated medical resource policies for Canada: 7. Undergraduate medical training. *Ibid*: 305-312
8. Idem: *Toward Integrated Medical Resource Policies for Canada*. Prepared for the Federal/Provincial/Territorial Conference of Deputy Ministers of Health, 1991
9. Idem: *Toward Integrated Medical Resource Policies for Canada: Background Document*, U of British Columbia (HPRU discussion paper 91:6D), Vancouver, and McMaster U (CHEPA working paper 91-7), Hamilton, Ont, 1991
10. Idem: *Toward Integrated Medical Resource Policies for Canada: Appendices*, U of British Columbia (HPRU discussion paper 91:7D), Vancouver, and McMaster U (CHEPA working paper 91-8), Hamilton, Ont, 1991
11. *Proposed Action Plan for Addressing Rural Physician Recruitment and Retention Issues — Draft*, Alberta Min of Health and External Advisory Committee on Physician Manpower, Edmonton, June 1990
12. *Background Paper: Actions for Rural Physician Recruitment and Retention* (rev ed), Alberta Min of Health, Edmonton, 1990
13. Manitoba Medical Association: *Proceedings of the Invitational Meeting on Rural Physician Supply*, Sept. 16, 1989 (mimeo), MMA, Winnipeg, 1989
14. Canadian Medical Association: *Report of the Advisory Panel on the Provision of Medical Services in Underserved Regions*, CMA, Ottawa, 1992
15. Canadian Association of Internes and Residents: *Recruitment and Retention of Physicians to Non-Urban Practice Areas*, CAIR, Toronto, 1992
16. Barer ML, Wong Fung P, Hsu D: Referral patterns, full-time equivalents, and the "effective" supply of physician services in British Columbia. In Boan JA (ed): *Second Canadian Conference on Health Economics*, U of Regina, Regina, 1984: 285-336
17. Horne JM (ed): Searching for shortage: a population-based analysis of medical care utilization in "underdoctored" and "undoctored" communities in rural Manitoba. In *Proceedings of the Third Canadian Conference on Health Economics, 1986*, Dept of Social and Preventive Medicine, U of Manitoba, Winnipeg, 1987: 173-198
18. *Canada Health Monitor*, survey 4, Price Waterhouse, Toronto, 1990
19. *Supply and Distribution of Physicians in Canada, 1990*, Health Information Div, Dept of National Health and Welfare, Ottawa, 1991
20. Bankowski Z: A wasteful mockery. *World Health* 1987; Apr: 3-4
21. Alberta Medical Association: *Report of the Task Force on Rural Medical Care*, AMA, Edmonton, 1989

22. Centre for Health Services and Policy Research: *Rollcall 91*, Health Human Resources Unit, CHSPR, U of British Columbia, Vancouver, 1992
23. Kazanjian A, Wong Fung P, Barer M: *Fee Practice Medical Service Expenditures per Capita, and Full-Time-Equivalent Physicians in British Columbia, 1987-88*, Div of Health Services Research and Development, U of British Columbia (HMRU 89:3), Vancouver, 1989
24. Gormley M, Barer M, Melia P et al: *The Growth in Use of Health Services, 1977/78 to 1985/86*, Saskatchewan Health, Regina, 1990
25. Kazanjian A, Pagliccia N, Aplan L et al: *Study of Rural Physician Supply: Practice Location Decision and Problems in Retention*, Health Human Resources Unit, Centre for Health Services and Policy Research, U of British Columbia (HHRU research report 91:2), Vancouver, 1991
26. Wright S: *Factors Influencing the Location of Practice of Residents and Interns in B.C.: Implications for Policy Making* (master's thesis), Dept of Health Care and Epidemiology, U of British Columbia, Vancouver, 1985
27. Hurley J: Simulated effects of income-based policies on the distribution of physicians. *Med Care* 1990; 28: 221-238
28. Carter RG: The relation between personal characteristics of physicians and practice location in Manitoba. *Can Med Assoc J* 1987; 136: 366-368
29. Canadian Medical Association: *Report of the Advisory Panel on the Provision of Medical Services in Underserved Regions*, CMA, Ottawa, 1992: 2
30. Borsellino M: New doctor wonders what his real role is in Yukon. *Med Post* 1990; 26 (26): 32
31. Spitzer W: The nurse practitioner revisited: slow death of a good idea. *N Engl J Med* 1984; 310: 1049-1051
32. Canadian Medical Association: *Report of the Advisory Panel on the Provision of Medical Services in Underserved Regions*, CMA, Ottawa, 1992: 8
33. Anderson M, Rosenberg MW: Ontario's underserved area program revisited: an indirect analysis. *Soc Sci Med* 1990; 30 (1): 35-44
34. Copeman WJ: Underserved area program: a 10-year success story. *Ont Med Rev* 1980; 47: 523-524, 532
35. Borsellino M: Native communities struggling to attract physicians. *Med Post* 1990; 26 (22): 6

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